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Our PUBLIC LANDS

BUREAU OF LAND MANAGEMENT

APRIL 1954 • Volume 4, Number 2

OUR PUBLIC LANDS . . .

500 million acres of land that belong to us and to our neighbors and to all the people of the United States . . . public lands that are rich in natural resources . . . timber, rangeland, water, minerals, and land for every use . . . "active acres" that must be carefully and wisely managed for the welfare of the Nation . . .

As a forum for the exchange of ideas and information on the development, utilization, and conservation of the resources on public lands, this periodical contains no copyrighted material. If pictures or material are reprinted, a credit line should be given OUR PUBLIC LANDS *and the Bureau of Land Management.*

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DEPARTMENT OF THE INTERIOR
Douglas McKay, Secretary

BUREAU OF LAND MANAGEMENT
Edward Woozley, Director

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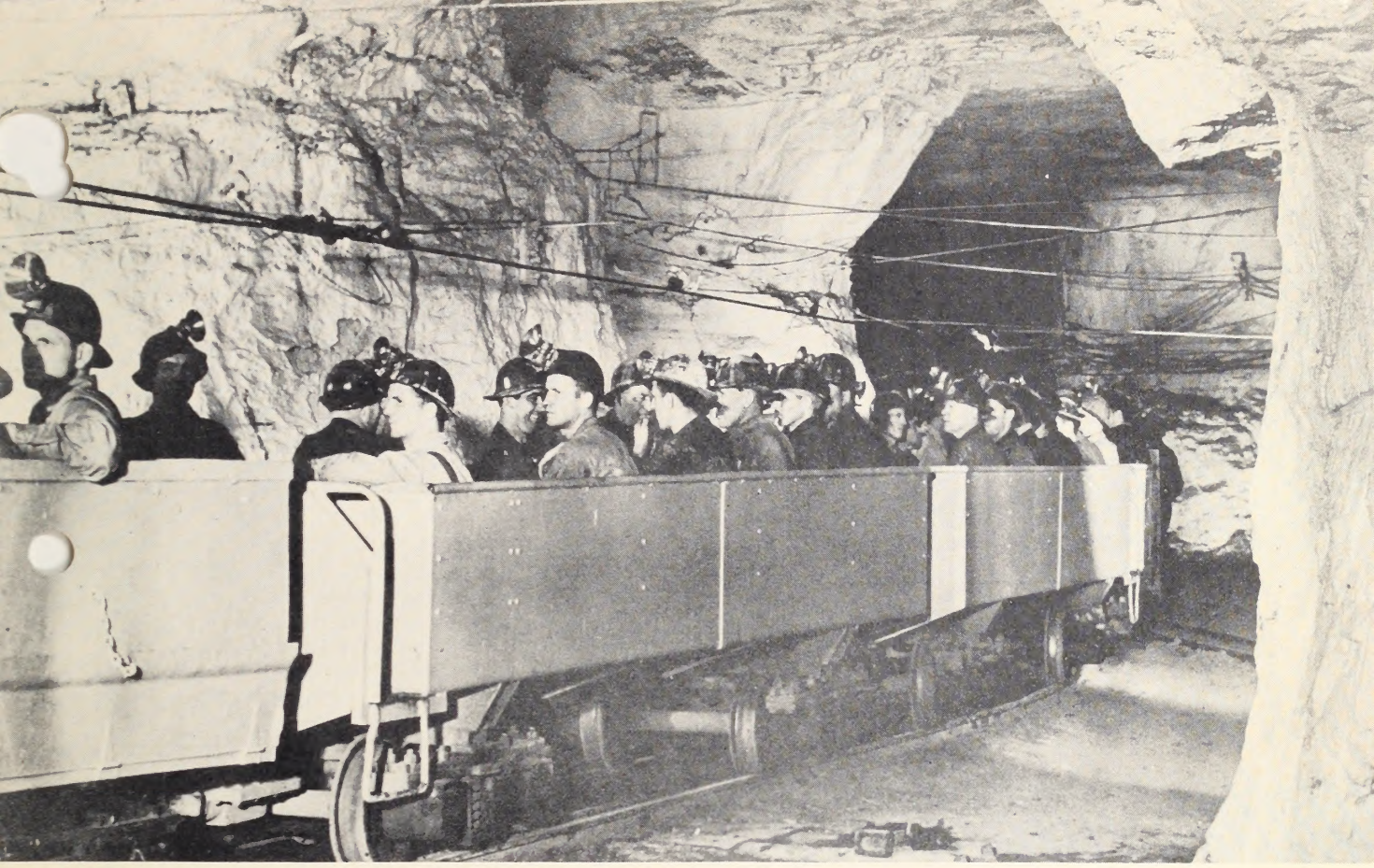
COVER

Oil rigs in Big Muddy Oil Field 18 miles east of Casper. A Chicago and North Western Railway photo supplied through courtesy of the Casper, Wyoming, Tribune-Herald.



INDUSTRY. Great industrial development results from the issuance of mineral patents. This Bureau of Mines picture shows miners returning to the surface after a day's work in a copper mine.

HOW TO OBTAIN PATENT TO A MINING CLAIM

by LEWIS E. HOFFMAN, *Chief*, Division of Minerals, and A. H. FURR, *Chief*, Branch of Mining

EDITOR'S NOTE: *The following article gives in brief form the way to obtain patent to a mining claim. For detailed requirements, and addresses of local offices please see Mineral Patent Procedure Bulletin, and Circular 1785, Lode and Placer Mining Regulations (part 184, 43 CFR). For Alaska, see Circular 1852 (part 69, 43 CFR).*

There is an ever increasing need for a more adequate supply of minerals in this country to support and strengthen our industrial economy as well as to insure our national security. The substantial public land areas of the United States offer a great opportunity for the exploration, development, and exploitation of such mineral resources. Under the United States mining laws, the role of free enterprise and spirit of individual initiative are given great encouragement.

Vacant public surveyed or unsurveyed lands, including those in the national forests as well as certain other lands in which the United States has reserved the minerals, located in 18 States, Arizona, Arkansas, California, Colorado, Florida, Idaho, Louisiana, Mississippi, Montana, Nebraska, Nevada, New Mexico, North Dakota, Oregon, South Dakota, Utah, Washington, and Wyoming and Alaska, are open to prospecting and upon discovery of valuable minerals, to location and purchase under the United States Mining laws by citizens of the United States and those who have declared their intentions to become citizens.

(Continued on page 12)

LOOKING INSIDE THE TREES

by JOHN C. HUNT, *Forest Protection Officer*, Region 1

The timber cruiser, like the forest ranger, is a romantic figure in fact and fiction. He spends his days working in the big, clean forest. He is a self-reliant fellow who depends upon his own judgment and skill developed through long experience.

If you were a timber cruiser for the Bureau of Land Management, anywhere in the States or Alaska, it would be your job to prepare blocks of timber for sale. You would be doing a big job and an important job.

You would need sufficient experience and knowledge so that figuratively you could look inside the trees to estimate the volume and quality of the wood. The Bureau of Land Management sold 654,995,000 board feet of timber in fiscal year 1953. The receipts totaled 14 million dollars. This was done on a market place basis. The timber was sold by competitive bids and paid for according to the volumes and values determined by the cruiser.

Every American citizen owns a share of this resource, which gives him a proprietary and financial interest in how the forests are managed and sold. Thus the determination of quantity and quality must assure a fair return to the Government. But at the same time the man who buys the timber must have a reasonable opportunity to make a profit or he will be reluctant to bid on the next block of BLM stumpage.

The first thing the timber cruiser must do is secure the status, or land ownership, from the Land Office records. Following this he checks the survey plats and field notes. Next the section lines are resurveyed to be positive of the location and ownership. The cruise starts from a known survey corner.

There are two approaches to cruising. One is the 100 percent cruise method. This is usually reserved for high value areas where it is important that each tree be measured. The partial cruises are divided into the strip and the line plot methods. Selection of the latter two depends upon topography, uniformity of forest stand, stocking, and other physical factors.

A cruiser crew is usually composed of two men, the compassman and the cruiser. The compassman lays out the course and paces the distance across the area being cruised and if needed collects data for a topographic map. The cruiser devotes his attention to the merchantable trees.

This is the crux of the job. It matters little if it is a 40-acre clear-cut sale of several million board feet of Douglas fir on the O & C lands of western Oregon or a 100,000 board feet sale of pine to be selectively logged on the public domain of New Mexico or Arkansas; the cruiser must do his job tree by tree. He measures the diameter of the trunk at breast height, he finds the number of logs in the tree, he estimates the taper of the tree trunk, and then relying upon his training and experience and upon his knowledge of the species, he decides the grade of each log in the tree. The surface of the tree provides the cruiser, who has the experience to see them, with certain unmistakable clues as to the condition of the wood under the bark.

After the trees on the area are measured the cruiser must estimate what the costs of logging, hauling, and milling will be. He must know the local selling price of lumber. From all this he arrives at a fair market value, leaving a margin for reasonable profit.

The timber is now ready to be advertised for public sale to the highest bidder.

To check BLM cruising standards mill recovery studies are made. These are made in the O & C area of western Oregon which is a BLM testing ground for methods and practices. A large number of marked logs from the cruised area are followed through the sawmill and the volume and sawed lumber grades are compared with the cruised volume.

At one recent mill study on the O & C lands, two new ideas for the conduct of mill recovery studies were tested. The first of these was the bunching, in the mill pond, of logs of a common size and grade and sawing them as a continuous operation rather than using the usual method of following individually marked logs through the mill. The second idea was the use of a dictaphone to record the lumber grades and volume at the

green chain. Instead of a man standing beside the lumber grader and calling the grades and dimensions of the boards to one or two men who write these data on tally sheets, one man records the information as rapidly as the boards are graded by calling it into the dictaphone. The two improvements reduced the number of men needed for the study by about one-half as well as reducing the time ordinarily required under the previous procedure.

The fact that most BLM timber sales continue to be made on the basis of a cruise rather than by scaling the felled logs in the woods or at the mill pond, has for many years been the cause of lively arguments as to the relative merits of the methods. The BLM believes its economic appraisal system is superior to log scaling. Selling timber by the cruise, or package deal, encourages better utilization of wood fiber from the timber sale area. This in turn reduces the fire hazard.

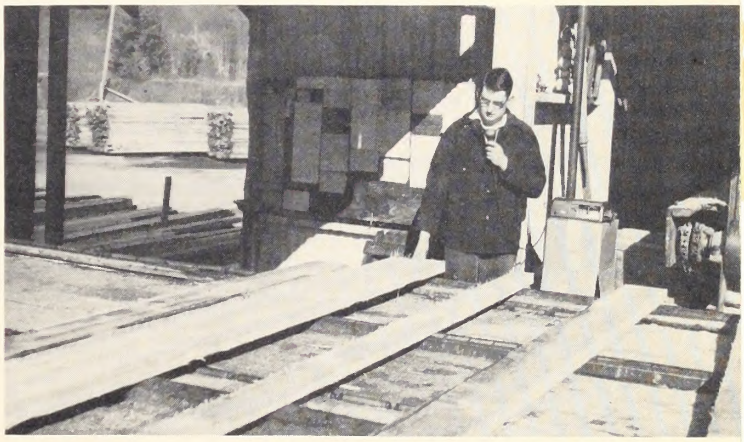
In addition, it is much more economical because fewer men are required to administer the same number of timber sales. There are three or four cruisers in each of the O & C districts (Oregon) and a lesser number in the public domain forest districts in Region I. This is a total of less than 30 men on such work in that region. These cruisers are preparing more than 600 million board feet of timber (300–500 sales) per year.

To keep a sufficient number of employees available to scale the logs on such a large number of small sales would require at least twice as many men and correspondingly higher costs. In other regions of BLM the forested areas and timber sales are smaller and even more widely scattered.

BLM has cause to take considerable pride in its timber management. The records for many years have shown a net return to the Treasury of several dollars for each dollar spent.

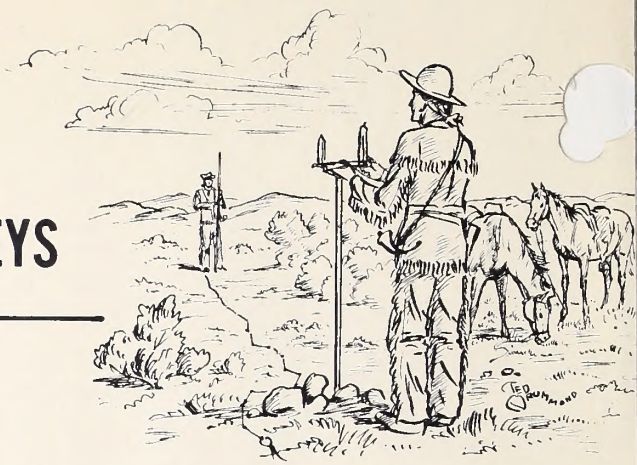
CRUISERS. Two crews of BLM cruisers estimating volume and value of timber on O. and C. timber sale in Western Oregon.

TALLY. Jack Lorts recording lumber tally by use of dictaphone. Mill study at Hult Lumber Co., Horton, Oreg., Eugene Forest district of BLM.



SORTING. Donald D. Crom, Eugene Forest district timber appraiser, sorting logs by diameter classes for mill study.

FACTS ABOUT CADASTRAL SURVEYS



by EARL G. HARRINGTON, *Chief*, Division of Cadastral Engineering

The rectangular system of surveys was designed in principle over 169 years ago to provide for the orderly survey and disposal of the vast land area that the United States found itself vested with through cessions of the Colonial States, the acquisition of areas from foreign countries, and treaties with the Indians.

The ordinance passed by the Continental Congress on May 20, 1785, with its brief provisions for the survey of 6-mile squares called townships, containing 36 one-mile squares, was the instrument of the law providing for the surveys over the entire public domain.

Congress, by legislation approved April 29, 1950, almost exactly 165 years since the ordinance of May 20, 1785, which provided for the rectangular system of surveys, authorized the departure from that system whenever it was not feasible or economical to extend the rectangular surveys in the regular manner or whenever such departure would promote the beneficial use of the lands.

The first rectangular survey of the public lands was made in southeastern Ohio in 1786 when seven ranges of townships were subdivided. This tract has become historical, and the ranges of which it is composed are referred to as "The Seven Ranges." The plats representing these surveys are in the custody of the National Archives, Washington, D. C.

The original public domain at its maximum extent consisted of over 1,800,000,000 acres, or about 80 percent of the total land area of Continental United States and the Territory of Alaska. It included the Territory of Alaska, the States of Florida, Alabama, and Mississippi, and all States except Texas, lying north and west of the Ohio and Mississippi Rivers.

The rectangular system of surveys has now been extended over more than 1,300,000,000 acres or approximately 90 percent of the original public domain area in Continental United States. The unsurveyed areas, consisting of more than 100,000,000 acres, are located in the 11 Western States—Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.

In Alaska the rectangular system has been extended over about 2,500,000 acres, or less than 1 percent of the total area of the Territory.

It is estimated that more than 7,000,000 corner monuments have been established in extending the rectangular surveys over the public lands. Prior to 1910 when the cadastral surveys were executed under contract, the corners were generally monumented by native material or wooden stakes and pits. Since 1910, when the contract system was abolished, the corners of the public land surveys have been monumented with standard metal posts manufactured from wrought iron or copper bearing steel pipe with a brass cap riveted to the top of the post for appropriate marking of the position of that particular corner. Under present specifications, these corner monuments are 30 inches long, 2 inches in diameter, with the lower end split and the 2 halves spread to form a flange.

The office record of a survey ordinarily consists of a plat and a written description of the field work. The plat represents the lines surveyed, established, retraced, or resurveyed, showing the direction and length of each of such lines; the relation to the adjoining official surveys; the boundaries, descriptions and area of each parcel of land; and, as far as practicable, a delineation of the topography of the region.

The field note record of all cadastral surveys executed in the United States and Alaska, on file in the Director's Office in Washington, D. C., comprises about 7,000 volumes. Although the field notes are primarily a written description of the field work they contain many items of interest concerning the area being surveyed and the hardships and danger encountered in making those surveys.

The vast and comprehensive rectangular survey net provides a simple and certain form of land identification and legal descriptions, and anchors in place the land of the public domain. Under this system every aliquot part of a section, whether it contains 5, 10, 40, or 160 acres, has a definite description. If the tract is described with reference to the proper section, township, range, principal meridians, and State, there is not another parcel of land in the entire area of the public domain with that identical description.

FIRE CONTROL. A big job every year on BLM lands.

BLM'S FORESTRY JOB

by VIRGIL T. HEATH, *Assistant Chief*, Division of Forestry, and JOHN C. HUNT, *Forest Protection Officer*, Region 1

From the great reaches of frozen tundra in Alaska south across the wide grazing districts of the 11 Western States, then southeast to the sun drenched piney woods of Arkansas, and back to the timber-rich O & C lands of Oregon the Bureau of Land Management is busy with many kinds of resource administration.

An important segment of the year-in year-out activities of the Bureau includes several phases of forestry work. All BLM forest lands are being brought under extensive forest management. This means that long strides have been made in providing better protection and supervision of the forest and woodlands and that the mature tree crop which is harvested is being replaced by young trees. Some BLM forest areas, particularly the O & C lands, are under sustained yield management.

Foresters define sustained yield as the growth of timber or wood fiber equaling the amount harvested or lost through fire, insects, or other enemies of the forest over a given period of time. This is a forest in continuous production.

The degree of intensity with which a forest can be managed depends upon many variable factors. Among others are availability and accessibility of the timber, demand and price of lumber, and laws regulating timber cutting, and the extent to which the public has been educated in the conservation of natural resources.

Before an adequate plan can be formulated for the management of public domain timber lands something should be known about the entire forestry problem in the United States. The annual drain upon the Nation's timber resources is increasing at a rapid rate. Between the years 1929 and 1943, the average annual lumber consumption was almost 26 billion board feet. From 1944 to 1952 this annual consumption had risen to over 36½ billion board feet.

The cutting of lumber constitutes only a portion of the demand upon the timber resources. The manufacture of pulp, veneer, and other wood

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ROUSTABOUT. Head roustabout checks action of an electrically operated pumping well in the Elk Basin field, Park County, Wyo. Stanolind Oil & Gas Co. operates the field for members of the Elk Basin unit. Picture by courtesy of Casper (Wyo.) Tribune Herald.

ECONOMIC IMPACT OF OIL AND GAS LEASING ON PUBLIC LANDS

by WILLIAM A. VOGELY, *Former Minerals Economist, BLM*

The petroleum industry has a tremendous impact on any region where it settles. And any major new oil developments in the 11 Western States or Alaska will be certain to involve a substantial amount of public land. It follows that Federal policy with respect to the exploration and exploitation of petroleum resources has a decided influence on the regional economies of the public land States and of Alaska. Perhaps the best recent example of the impact of this fabulous industry on a region, and of the part played by the Bureau of Land Management, is the development of the Williston Basin in Montana and North Dakota.

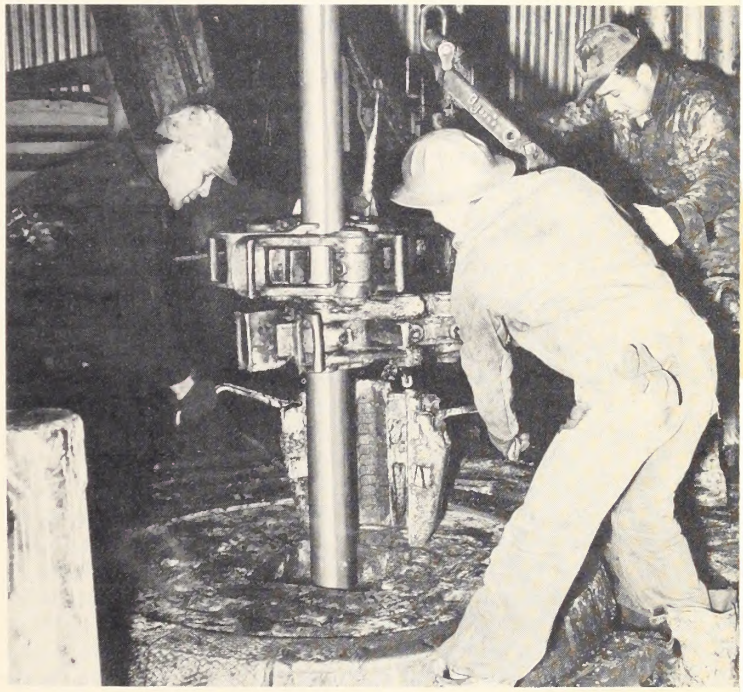
The pattern of development of the Williston Basin is quite typical of that for any new oil province. For many years the basin, which covers eastern Montana, northwestern South Dakota, western North Dakota, and southern Manitoba and Saskatchewan, was recognized as a geologic province in which conditions favorable to a large scale accumulation of petroleum existed. Based on this indication, wild-catters operated in the area, but oil was not found until early in 1951 when a small well was brought in southwestern Manitoba. When this was followed by a discovery in North Dakota in April 1951 the oil rush was on in earnest. By the end of August 1953 there

were eight oil fields in the North Dakota portion of the basin and 16 in the Montana portion of the basin, with production of approximately 20,000 barrels of oil per day. In December 1952 it was reported that the petroleum industry was spending $100,000,000 a year in the Williston Basin and was employing directly more than 7,000 persons. This huge expenditure caused the cities and towns of the area to take on the appearance of boom towns and, of course, employment was indirectly given to many times the 7,000 people directly employed.

With the initial discovery, a great surge of interest in leasing developed and that increase in demand for Federal leases fell full force on the Billings Land Office and the Washington office of the Bureau of Land Management for leases on acquired lands. The noncompetitive oil and gas leasing system of the Bureau proved completely capable of handling this great up-surge of business and permitted the passing into the hands of private individuals for exploration and exploitation substantial acreage of land. Before the discovery of oil in the basin, there were 2,000,000 acres of public land under oil and gas lease in Montana and North Dakota. In June 1951 only 3 months after the first well, there were over 2,300,000 acres under lease; in June 1952, 4,600,000; in June 1953, 6,900,000 acres. In the space of 2 years almost 5,000,000 acres passed into the hands of the petroleum industry for exploration and development. A system of leasing which can accomplish this feat of the transferring of mineral lands to private citizens so rapidly in response to an unexpected flood of demand is certainly of much value to the economy of the public land states.

The Williston Basin is only one example. Oil is being searched for in many areas of the United States and Alaska. When the drill strikes liquid gold in some remote spot, money, men and materials, meaning prosperity, flow into the region—and the ability of the Bureau to make mineral lands available plays no small part in swelling the flood.

ALASKA OIL. Alaska Oil & Gas Development Co. spudding in September 20, 1953. This hole, located 125 miles northwest of Anchorage, is the first privately financed well in the interior of Alaska. Credit for picture: Mac's Foto Service, Anchorage.



DRILLING. Another Wyoming oil picture, a Casper Tribune shot.

PIPELINE. Laying the oil pipelines, staff photo of Casper Tribune Herald.

PUMPING. A Casper Tribune Herald picture of Wyoming oil developments.

active acres

ACTIVITY MAP

The area of public lands under administration of the Bureau of Land Management in the State of Washington are relatively small. Range, woodland and forest total approximately 476,700 acres.

Regardless, however, of the small acreage and the scattered nature of much of the remaining public domain, the lands are often of considerable importance to local peoples. An office is located in Spokane. A small forestry staff operates from the Spokane office making timber sales, processing trespass cases and inspecting the areas to prevent fire and other resource damage. Timber sales during fiscal year 1953 totaled 4,476,000 board feet, which sold for $81,000.

There are no organized grazing districts in Washington. Public domain grazing leases are also handled from the Spokane office under section 15 of the Taylor Grazing Act. For fiscal year 1953, 369,000 acres were leased by 772 livestock operators who own adjoining land. Approximately 50,000 head of livestock are grazed on this land part of each year. Payment for grazing use varies from 0.1 of 1 cent to 48 cents per acre depending upon the grazing capacity.

Considerable mining activity is also found on the public domain lands in eastern Washington.

NORTH POLE, ALASKA

Fourteen miles from Fairbanks is North Pole, Alaska. This new town embraces lands in homesteads Fairbanks Serial 05670, patented May 10, 1949, and Serial 06169, patented December 8, 1949.

North Pole has an estimated population of 1,500 people in the city limits and within a 3-mile radius. It has its own city government including police department, fire department, planning and zoning commission, building inspector, city magistrate, and grammar school with 3 teachers.

According to the Fairbanks Daily News-Miner account, "There are 10 business houses within the limits of the city and 5 in the adjacent area. The North Pole Chamber of Commerce is a member of the Alaska Chamber and the National Chamber of Commerce.

"Future plans for the city include a large park and playground, golf course, and large parking area.

"In the city park, sponsored by the North Pole Chamber of Commerce, will be Santa's workshop, expected to be a favorite stopping place for tourists and children. A team of reindeer is to be kept in the park for Santa and his child visitors. Santa is expected to be on duty with his helpers at his workshop throughout the tourist season and at Christmas, according to plans of the Chamber of Commerce.

"The streets are being named after Santa and his reindeer, with the main street called Santa Claus Lane. The main street is 100 feet wide, with all the other streets 60 feet in width."

OIL SHALE

The April 1951 issue of Our Public Lands carried an article, Land Office Boom in Oil-Shale Patents by H. J. Vander Veer, of the Salt Lake office of the Bureau of Land Management. To keep readers informed of oil shale, OPL quotes from a recent press release issued by the Geological Survey.

"A new report showing the geology and oil-shale resources of the Cathedral Bluffs area along the western margin of the Piceance Creek Basin, Rio Blanco and Garfield Counties, Colo., has been published by the Geological Survey.

"The area contains 385 square miles, most of which is underlain by oil shale. It is estimated that the area is capable of yielding slightly less than 5 billion barrels of oil in shale beds that average 30 gallons of oil per ton; slightly more than 11 billion barrels of oil in shale beds that average 25 gallons of oil per ton; and about 28

billion barrels in shale beds that average 15 gallons of oil per ton. These oil reserves are computed on continuous sequences of oil-shale beds more than 15 feet in thickness.

"The report is published on a single sheet, measuring 41 by 54 inches. The geologic map (scale 1:62,500, or 1 inch equals nearly 1 mile) shows the distribution of the oil shale and associated rocks and structure contours on the Mahogany Marker—a key bed in the oil-shale sequences. Seven columnar sections show the correlation of the oil-shale beds and adjacent rocks, the estimated oil content of the oil-shale beds, and, for three of the columnar sections, the results of laboratory analyses of the oil content of the richest portion of the sequence are shown. Four small-scale maps show the distribution and thickness of oil shale with selected yields of 30, 25, and 15 gallons per ton. Also, on the sheet is a geologic cross section, two tables showing the potential oil reserves, an index map showing the location of the mapped area, and a descriptive text.

"The report, titled 'Geology of the Cathedral Bluffs oil-shale area, Rio Blanco and Garfield Counties, Colorado,' by J. R. Donnell, W. B. Cashion, and James H. Brown, Jr., is published as Map OM 134 of the Geological Survey's Oil and Gas Investigations series. Copies may be purchased at 50 cents each from the Distribution Section, Geological Survey, Denver Federal Center, Denver, Colo., and from the Chief of Distribution, Geological Survey, Washington 25, D. C. The report is also available for over-the-counter sale (but not by mail) at Geological Survey offices, 468 New Customhouse, Denver, Colo.; 234 Federal Building, Tulsa, Okla.; and 504 Federal Building, Salt Lake City, Utah."

WYOMING OIL MAP

The northern border of the Wind River Basin, including parts of Owl Creek and Bighorn Mountain ranges in central Wyoming, has been mapped by geologists of the Geological Survey as part of the continuing search for areas that may provide new sources of oil and gas.

The map, prepared with the cooperation of the Geological Survey of Wyoming and the Department of Geology, University of Wyoming, is printed on a scale of 1:48,000, or 1 inch equals 4,000 feet. It shows the geology of an area of 540 square miles, including parts of the mountain ranges and the adjacent Wind River Basin. The mountains are complexly faulted in their southern margins, probably as a result of the mountain ranges having been moved southward along a buried thrust fault whose presence is inferred from structural and stratigraphic data. Thrust faults of small displacement can be observed in the eastern part of the area and it appears that one of these thrust faults controlled the accumulation of oil in oil-stained sandstone beds beneath the fault.

The report, issued as OM 124, is printed on two sheets measuring approximately 41 by 54 inches. It is titled "Geology of the Badwater area, central Wyoming," and was prepared by Harry A. Tourtelot. Copies may be purchased at $1 per set from the Distribution Section, Geological Survey, Denver Federal Center, Denver, Colo., and from the Chief of Distribution, Geological Survey, Washington 25, D. C. Copies are also available for over-the-counter sales (but not by mail) at Geological Survey offices at 468 New Customhouse, Denver, Colo.; 315 Federal Building, Billings, Mont.; 234 Federal Building, Tulsa, Okla.; and 504 Federal Building, Salt Lake City, Utah.

REORGANIZATION

Selection of three area administrators to head new field offices of BLM with headquarters in Portland, Salt Lake City, and Denver have been announced as follows:

Area I—Headquarters, Portland, James F. Doyle, now serving as Assistant Regional Administrator of BLM in Portland; Area II—Headquarters, Salt Lake City, H. Byron Mock, now serving as Regional Administrator, Salt Lake City; and Area III—Headquarters, Denver, Westel B. Wallace, now serving as Regional Administrator, Billings.

The selections are the first step in the reorganization of the Bureau of Land Management following through on recommendations made by a recent survey team appointed by the Secretary. The 3 new area offices which will replace 6 regional offices of BLM have been selected to give better economical service according to geographical location. Area I will comprise the coastal States of Washington, Oregon, and California; Area II will consist of the intermountain States of Idaho, Utah, Nevada, Arizona; and Area III, Montana, Wyoming, Colorado, New Mexico, and such other States as will not be serviced out of the Washington office.

Eleven State BLM offices which will be located in Spokane, Portland, Boise, Billings, Cheyenne, Denver, Salt Lake City, Reno, Sacramento, Phoenix, and Santa Fe and an additional branch of the Sacramento office in Los Angeles, will be operating units for the area offices. Selections for only two State offices have been announced as follows: California, Luther Hoffman, now serving as Regional Administrator, Region II, San Francisco; New Mexico, Eastburn Smith, now serving as Regional Administrator, Region V, Albuquerque.

Selection of other appointments will be made as the reorganization progresses. William Guernsey, now serving as Portland office regional administrator, will be called to Washington to accept a special responsible assignment pending further Washington office reorganization.

MINING CLAIM

(Continued from page 3)

Mining locations may not be made for deposits of coal, oil, gas, oil shale, sodium, phosphate, potash (and in Louisiana and New Mexico, for sulphur) since rights to these minerals in lands belonging to the United States may be acquired only under the mineral leasing laws. Other than the foregoing deposits, whatever is recognized as a mineral by the standard authorities, whether metallic or other substance, when found in public lands in quantity and quality sufficient to render the lands valuable on account thereof, is treated as coming within the purview of the mining laws.

Mining claims are of two kinds: Lodes—in which the mineral is in place in the rock, sometimes referred to as veins, and Placers—where the mineral is not in place in the rock—placers include those created through the action of rivers in depositing particles of rocks and ore bodies.

Lode locations may not exceed 1,500 feet in length along the course of the vein and 300 feet in width on each side of the middle of the vein at the surface. Placer locations may be made for not more than 20 acres for each locator—no claim to exceed 160 acres made by not less than 8 locators. The United States Mining Laws do not limit the number of locations that can be made by an individual or association.

The Federal Law with reference to mining locations requires: (1). The discovery of valuable minerals, (2) The marking of the location on the ground so that its boundaries can be readily traced.

There is no Federal law, generally applicable, requiring that a notice of the mining location be recorded. However, this, together with such matters as the posting of notice on the claim, the time within which a discovery shaft should be sunk, the minimum depth of the shaft and other matters are usually required by the laws of the respective States. These laws, as well as the regulations of local mining districts, when not in conflict with the provisions of the United States mining laws, must be observed by the mining locator.

The mineral deposit discovered must be such as would justify a person of ordinary prudence in the further expenditure of his time and means in an effort to develop a paying mine.

The possessory rights acquired by the owner of a valid mining claim may be sold, mortgaged, inherited and taxed without infringing upon the rights of the United States.

One hundred dollars worth of labor must be performed or improvements made on the claim annually. Failure to do so will subject the claim to relocation or "jumping" by another, unless work for the benefit of the claim is resumed before such relocation is made. Failure to perform such assessment work in Alaska works a forfeiture of the claim.

The determination of the question of the right of possession between rival or adverse claimants to the same mineral land is committed exclusively to the courts.

After discovery of valuable minerals and the expenditure of not less than $500 in labor or improvements in the development of the claim, the owner may apply to the Bureau of Land Management for a patent.

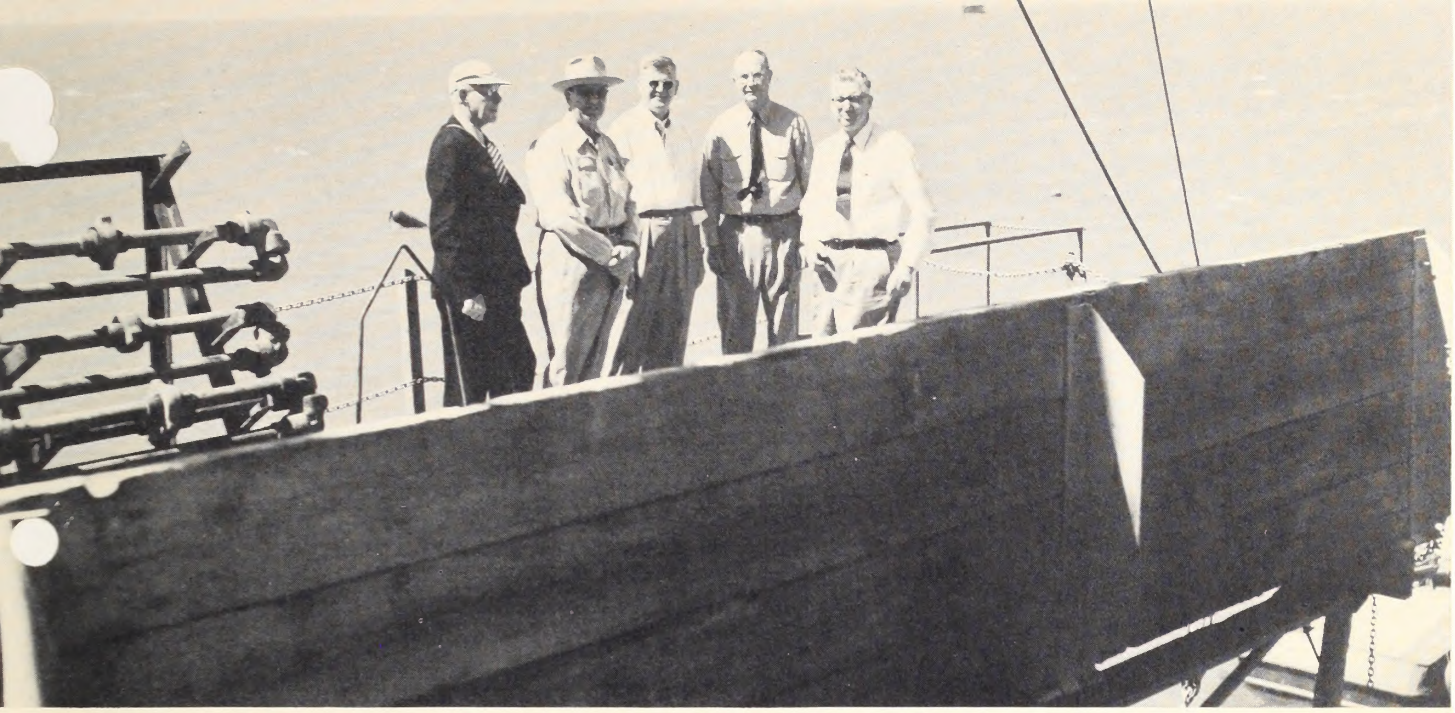
In all lodes and in placers covering unsurveyed lands or lands which cannot be described in terms of public land surveys, the claims must be surveyed. Claimant should file application for mineral survey with the appropriate Regional Administrator of the Bureau of Land Management. The claimant must make a deposit sufficient to cover the costs of plats, field notes, and office survey work. He must select a United States mineral surveyor from a list approved by the Regional Administrator and make satisfactory arrangements with such surveyor for payment of his services.

Formal notice of the application for patent must be given by posting a copy on the claim, together with a copy of the plat of survey. Patent application must be filed in the appropriate land office, setting forth the nature, location, and value of the mining improvements. The application should be accompanied by a $10 filing fee, proof of citizenship, abstract of title or other proper proof of possessory title, and certain other papers.

After publication and in the absence of other objection, claimant makes payment for the land, at the rate of $2.50 per acre or fraction for placers, and $5 per acre or fraction for lodes and the manager issues final certificate.

The mining claim is then examined by a government mining engineer whose report together with the case record is transmitted to Washington for adjudication and issuance of patent, if full compliance has been made with the mining laws and regulations. If compliance has been deficient in respects that can be remedied by curative action, the applicant is permitted to do so within a reasonable time. If, however, the lands are not mineral in character or there has been insufficient mineral discovery or there are other grounds for initiating government contest proceedings, full opportunity is given the claimant to answer the charges and appear at a hearing to offer evidence of the validity of the claim. Provision is also made for appeal to the Director of the Bureau of Land Management and to the Secretary of the Interior from any adverse decision.

The policy of the Bureau of Land Management and its staff is to deal in a friendly, cooperative, and constructive manner with everyone who is interested in the public lands and their resources; the personnel of the Bureau is dedicated to the service of the lone digging prospector, equally with that of the large productive mine, and in that spirit stands ready to be of every further assistance consistently possible under the law.



OUTER CONTINENTAL SHELF. Director Woozley and other officials inspect Outer Continental Shelf operations on a drilling platform off the coast of Louisiana. Left to right they are: Dr. William E. Wrather, Director, Geological Survey; an unidentified oil official; Stuart Mossom, Magnolia Petroleum Co.; J. R. Reeve, oil and gas supervisor, Tulsa, Okla., and Edward Woozley, Director, Bureau of Land Management. Picture courtesy of Gulf Co.

LEASING IN THE OUTER CONTINENTAL SHELF

by LEWIS E. HOFFMAN, *Chief, Division of Minerals*

A notice of proposed regulations concerning oil and gas and sulphur leases and operations in the outer Continental Shelf was published in the FEDERAL REGISTER of February 11, 1954. These proposed regulations, covering oil and gas, sulphur and other minerals in the outer Continental Shelf, follow closely the proposals made by a group of operators now prospecting and producing oil and gas in the outer Continental Shelf under State leases. Industry was granted 30 days from date of publication to submit such suggestions or objections which they deemed appropriate, and as OUR PUBLIC LANDS goes to press suggestions received are being carefully studied before final regulations are approved in the Department.

The potential oil reserve in the outer Continental Shelf has been estimated at approximately 12,450,000,000 barrels, as follows: in Louisiana, reserve consists in number of barrels 3,750,000,000; in Texas 7,800,000,000; and in California 900,000,000.

Jurisdiction to grant the right to prospect, explore, and produce oil and gas from the outer Continental Shelf was granted to the Secretary of the Interior under the act of August 7, 1953, known as the Outer Continental Shelf Lands Act. According to section 6 of the act, the lessees, under leases issued by the States of California, Louisiana, and Texas, embracing all or part of the lands in the outer Continental Shelf, or outside of the 3 geographical mile line for Louisiana and California and 3 marine league line for Texas, were required to apply to the Bureau of Land Management for continuation of such leases. To date four hundred and four State leases have been filed in this office to conform to section 6 of the act. Adjudication of these cases is awaiting approval of the regulations.

FORESTRY JOB

(Continued from page 7)

products averaged over 15¼ billion board feet annually during the years from 1934 to 1943. They are without doubt much higher today. It is reliably estimated that there is an additional 4¼ billion board feet credited to destructive agencies such as fire, insects, winds, etc.

There are about 461,000,000 acres of commercial forest land in the United States. Approximately 89,000,000 acres of the total is administered by various agencies of the Federal Government. The Bureau of Land Management is doing a substantial part of the total job of public forest and woodland management. In Alaska the bulk of the forest and woodlands are administered by BLM.

The Oregon and California railroad grant lands plus the reconveyed Coos Bay Wagon Road lands, which are commonly known as the O & C lands and cover an area of over 2½ million acres, are an excellent working example of sustained yield management as authorized under the act of August 28, 1937. Fifteen years of sustained yield management of these lands has indicated that the gross income in comparison to the costs is over 6 to 1 in favor of income. This excellent ratio in favor of income has not gone unnoticed by large lumbering firms from the standpoint of serving as an excellent example of what could be expected of timber holdings. The O & C lands support 60 billion board feet of timber which will sustain an estimated annual cut of over 900 million board feet.

The public domain timber land, other than O & C, forms a broken land pattern which collectively adds up to an impressive total of over four million four hundred thousand acres bearing over twenty billion board feet. This land has a sustained yield capacity of almost 237 million board feet.

Vast acreages of Juniper-pinion pine and other woodland types cover over 30 million acres in the Western States. This timber is of little commercial value to the lumber industry but it is of great importance to local cattlemen as a source of posts, fuel, other building material used locally, for ranch structures and fuel. These lands are managed in conjunction with grazing districts as part of the job of range management, because their value for grazing, recreation, wildlife, and watershed protection is well recognized.

Alaska public domain timber lands form a huge reservoir of timber for tomorrow. Adequate fire protection is the big management problem today. It is estimated that 80 percent of the timber land in Alaska has burned over one to many times in the past century. Approximately 40 million acres of good spruce stands remain. Twice that amount of acreage, which once bore spruce before being devastated by fire, will again produce good spruce if adequate funds and personnel are provided for protection.

The 162 million odd acres of forest and woodland under the jurisdiction of the Bureau of Land Management are considered as a sacred trust worthy of its best efforts.

To do the forestry job which the future will demand, the BLM must provide forest protection, guard watershed and wildlife areas, increase reforestation, and assist in building access roads. The public has a right to expect the best multiple-use practices on BLM lands to meet the Nation's expanding needs.

Vermiculite on Public Lands

The largest known deposit of vermiculite in the United States is situated about 7 miles east of Libby, Mont. This deposit was located as mining claims on the public domain. It is now being operated by the Zonolite Co. which mines the deposit by open pit methods, mills the mine-run ore, and ships the higher grade material to processing plants in many cities throughout the United States where it is expanded by heat treatment for commercial use.

Vermiculite deposits have also been found on other public lands in Montana, Wyoming, and Colorado.

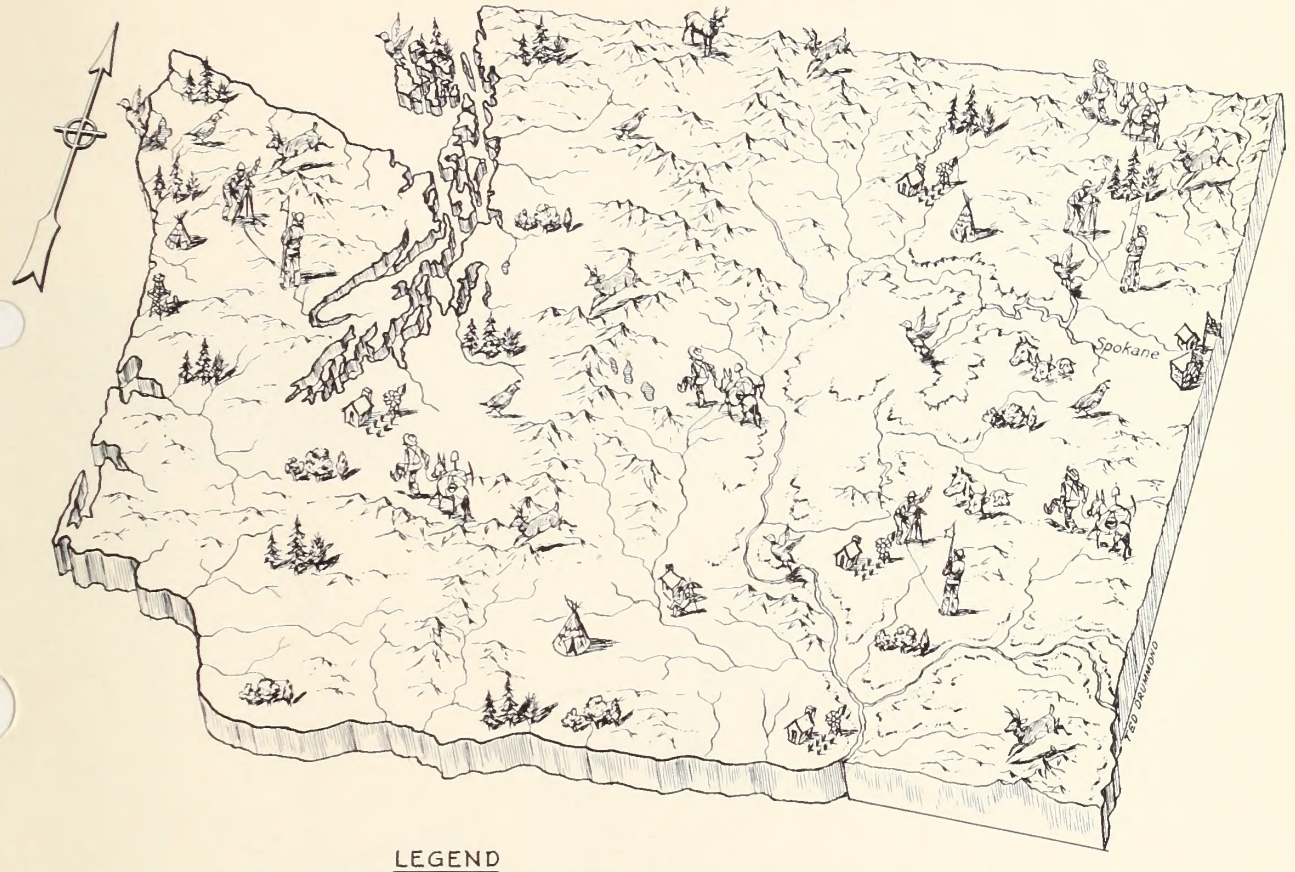
IT'S THE LAND LAW

(Continued from page 16)

occur in immense quantities and over widespread areas and which have no intrinsic value as would gold, silver, etc., it is clear that the real question is not whether they are minerals, but whether the particular deposits are "valuable mineral deposits." One of the essentials to the validity of a mining location based on such a mineral, is that the deposits be valuable. Their value is established by proving that they can be mined and marketed at a profit. On the other hand the "profitable marketing" test is not applied to a location of a vein or lode bearing gold, silver, or other mineral possessing intrinsic value. Even if marketing of mineral from the segment of vein exposed has been at a loss, the location is valid if the discovery is such as in that locality would warrant a man of ordinary prudence in the further expenditure of his time and money in the hope of developing a paying mine.

The moral to the above is that under the mining laws a man should not locate a cow, a turnip patch, or a worthless mineral, at least not until the cow or turnip patch has died and become a part of the earth possessing economic value and the worthless mineral through the efforts of science has become a valuable one.

WASHINGTON LAND-USE AND ACTIVITY MAP



LEGEND

Oil & Gas

Homesteads

Small Tracts

Cadastral Surveys

Mining Claims

Wildlife

Deer

Elk

Upland Game Birds

Water Fowl

Timber

Saw Timber

Woodland

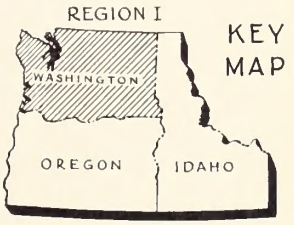
Grazing

Section 15 Leases

Administrative Offices

Land Office

District Forestry Office



Area covered by this Activity Map.

For comments on the map, please see page 10

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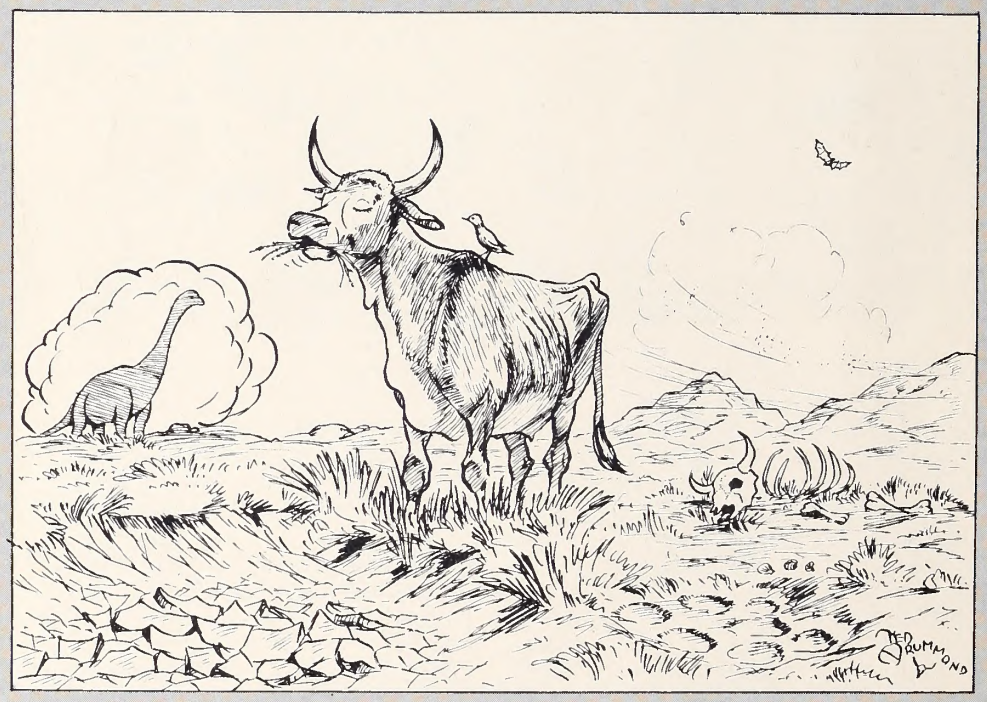
IT'S THE LAND LAW



ANIMAL, VEGETABLE, OR MINERAL?

What is a "mineral" within the meaning of the basic United States mining laws of 1872? If something is mineral, can it be acquired by location under that act? Obviously a living substance, whether vegetable or animal, is not such a mineral; but at what precise point does such a substance become a mineral as it dies and decays? Take peat moss, for instance. The question whether it ever is a mineral and subject to location is now in litigation, but if it is a mineral, just when does its vegetable structure change into mineral matter? A deposit of guano (sea-bird or bat manure), valuable for its phosphate content, is a mineral and subject to leasing under the mineral leasing act, or to location where the mining laws apply. The mineral character of oil and gas has been questioned because of its origin in the organic carcasses of prehistoric animals. Mud may be a mineral and if the particular deposit thereof is commercially valuable because it is suitable for use in drilling of oil wells it can be located. Recently a court held that sand and gravel are not minerals; but that decision is subject to question. From various other decisions concerning ordinary sand, gravel, or stone which

(Continued on page 14)